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DATE OF INFORMATION 10 August 1955		OFFICE OF NAVAL INTELLIGENCE		DATE OF REPORT 19 August 1955	
FROM DIO-12ND		SOURCE OBSERVATION & VARIOUS AS INDICATED		REQUEST NO. 50X1	
SUBJECT REPUBLIC OF CHINA: FISHING JUNK "FREE CHINA"					

BRIEF (FOR REPORTS OF MORE THAN ONE PAGE, ENTER CAREFUL SUMMARY)

This report forwards information, data and photographs of the 78' Chinese junk "Free China" which arrived in San Francisco, California on 8 August 1955, with six crew members aboard, after sailing from Kiirun, Formosa on 16 April 1955.

Encls (1) through (63), Photos of Chinese Junk FREE CHINA, taken at San Francisco, California on 10 August 1955

1. The FREE CHINA departed from Kiirun on 16 April 1955, and arrived at Okinawa on 26 April 1955; departed Okinawa on 3 May 1955 and arrived Yokosuka, Japan on 13 May 1955; departed Yokosuka on 17 June 1955 and sailed direct to San Francisco via very nearly the northern great circle route, arriving San Francisco on 8 August 1955.

2. Persons who were aboard the junk throughout its trip were:

- "Marco" Ye-Ling CHUNG, age 29 (Captain)
- "Paul" C. C. Chow, age 29 (Navigator)
- "La-Chi" HUI, age 34
- "Hono" Chi HUI, age 34
- "Benny" Chia-Chen HSU, age 29 (Engineer)
- Calvin E. MELBERT, age 27 (Third Secretary of the American Consulate in Taipei, Formosa)

All the Chinese were originally from the Canton area, but now are reportedly fishermen from Formosa. All appeared to be in good health upon arrival in San Francisco.

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3. The greatest problems encountered with the junk during the voyage was the weakness of the joint between the tiller and the rudder post. Failure of the tiller during heavy weather resulted in a message being sent from the junk requesting assistance in the Okinawa area (see comments). However, according to the crew, the weakness appears to be a rather frequent failing of this type of construction.

4. Machinery. The junk has no auxiliary propulsion machinery, its sole motive power being by sails. However, it does have a 5 HP BUKH diesel engine which is used for auxiliary purposes. Fuel consumption of this engine is 1/4 gallon per hour. The engine was made in Denmark, and appears to be very new. It drives a jack shaft which is coupled through a clutch to two flat face pulley wheels, one driving a 20V DC generator, and the other driving a windlass mounted on the main deck. Either of these may be secured while the other is operating by removal of the flat drive belt. Another pulley on the jack shaft drives a small bilge pump which is capable of pumping any of the holds in the junk through use of a long suction hose. The generator is used to charge two sets of two batteries, which in turn are used to operate 12V lights in the cabins and engine room, and to provide power for a 12V dynamotor which powers the radio set. The radio is a former U.S. Navy type, TCS, such as formerly used aboard amphibious craft. Other non-Chinese fittings and equipage included U.S. Navy type battle lanterns, signal flares, a certain amount of canned goods, a rubber life raft, and U.S. made navigational equipment.

5. Hull. The hull is wood, 78' long, 16' wide, and 5' deep (as measured at the maximum depth from the deck to the keel). Displacement is 40 tons. The hull is divided into ten watertight compartments by transverse bulkheads which vary from three to six inches in thickness. These bulkheads extend from the keel to the main deck. The aftermost bulkhead is about 12" thick since it must carry the load of the rudder post. The six inch bulkhead is immediately aft the main mast, and is a structural member which apparently helps support the mast. Three inch thick bulkheads are used at the forward end of the cabin, and at the mid point of the cabin, apparently the smaller thickness is used since the cabin itself adds considerable strength to the hull. The sides of the cabin are about two inches thick, secured to ribs and beams which extend downward to the interior of the hull. All planking in the cabin and hull is joined together by spikes about 7" long, which are slightly curved in manufacture to enable them to be driven into pre-bored holes in adjacent planks to join the planks in what may best be called toe-nailing. It was not possible to determine the thickness of the hull strakes, but they are at least two inches thick, possibly more. There appears to be two sets of timbers which run longitudinally nearly the length of the ship, and are prime supports for the decks. These timbers are approximately eight inches square and about five feet apart,

6. Sails and rigging. The sails are made of canvas, and bamboo battens are used in pockets which extend the length of the sails. It was not possible to determine the sail areas, due to curvature of the leech. However, the following dimensions were reported by crew members:

Height of main mast (from deck), 51'
 Height of fore mast (from deck), 42'
 Length of main gaff, 36'
 Length of main boom, 27'
 Length of fore gaff, 18'
 Length of fore boom, 19'

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Apparently the junk was rigged with three masts at one time, with a miszen mast located flush with the after end of the cabin. However, since operated by the present crew, this miszen has not been rigged. All rigging was apparently of Chinese origin, and was generally well worn, and originally oversize when compared to strength required for the same loading if good Manila line were to be used. A spar of about 10" diameter and approximately 10 feet long was available as a sea anchor. The best point of sailing was reported to be on a broad starboard reach, which resulted in the best speed, with a minimum of pitching. For some reason the junk pitched more when on a port reach than when on a starboard reach. In sailing into the wind, the junk could make three knots forward with a 20 knot wind while pointing to within five points of the wind. Pointing higher than five points resulted in the junk just holding its own against the wind, plus making leeway.

7. Navigation. Several United States H.O. publications were used in navigation. The junk carries a sextant which is marked "U.S. Maritime Commission." It also has a chronometer, apparently of either Chinese or Japanese manufacture. A taffrail log was available. Charts used were U.S. Hydrographic publications. A number of books which appeared to be Chinese Hydrographic publications were observed on board. The course between Japan and San Francisco followed very nearly the great circle north of Hawaii. However, the track appeared to be somewhat south of the actual great circle. Best days sailing during the trip was 160 miles.

8. Supplies. A total of 8 tons of fresh water was available on board at the beginning of the trip from Japan. Of this one and one-half tons were used en route. Of a total of ten barrels of fuel oil, 100 gallons were used during the trans-pacific trip, both for the auxiliary engine, and for the galley range. Food consisted of canned food and rice. Canned goods included mostly Chinese and American canned goods, such items as curry beef, bamboo shoots, pork, pigs feet, and beans. A total of 600 pounds of rice and 250 kilograms of flour was consumed during the trip. A small "window box" garden provided some fresh vegetables and two live chickens were carried, only one of which was eaten. The junk had adequate stowage for all these supplies. The location of stores was as follows: (cargo spaces indicated by number from bow to stern)

- | | |
|-----------------|------------------------------------|
| 1 void | 6 water and fuel |
| 2 water | 7 engine room |
| 3 water | 8 food stores (beneath cabin deck) |
| 4 empty barrels | 9 fuel, water |
| 5 miscellaneous | 10 spare sails |

Cargo spaces number two and three which contained water, apparently were used for fresh water during the trip, and as nearly as could be determined, this was kept in the space in "bulk" form, i.e., not in barrels or other containers. Fore and aft baffles were observed to be located in these spaces to prevent lateral shifting of water when the junk rolled (see enclosures (45) and (46)). Appearance of the wood from which these baffles were made indicated they were of much more recent construction than any other part of the junk. (Crew members reported the junk as probably about 20 years old.) In addition, it would take nearly all of the two spaces to hold the eight tons of water reported to have been available at the start of the trip. It is not known how contamination of this fresh water by the sea water was effectively prevented. A supply

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of canned water was also carried. This canned water was carried in number 6 cargo space. Also in this space were four barrels of fuel. Food stores were carried in the store room under the living quarters. An interesting structural feature in this area is a double longitudinal beam which allowed the planks forming the hatch to this store room to be lowered about 18" as supplies were consumed, thereby giving additional head space in the cabin. Six barrels of fuel were stowed under the after cabin. Sail spars were carried in a very shallow hold aft of the cabin.

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